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CRITICAL APPRAISAL OF LOCAL INDUSTRY IN CLUJ REGION OF RUMANIA

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This report is an extract from a study by the political economy collective of the Babes and Bolyai Universities of Cluj, prepared under the guidance of Professor A. Negrea.

The Rumanian Worker's Party attaches great importance to local industry. The economic exploitation of local resources is a task for the People's Councils, as well as a way for the masses to participate in building the basis of the socialist economy.

The economic activities of a district, town, or region are generally varied and assume different forms, depending on specific local conditions. To properly utilize local resources, it is necessary to know and study the local geographic and economic conditions which (1) are conducive to various industrial and agricultural activities, (2) permit the utilization of power resources, construction materials, deposits of various waste materials, (3) determine the concentration of the working masses in various centers, etc.

To exploit local resources under the most favorable conditions, it is necessary to possess a thorough knowledge of the natural wealth at the disposal of industry, agriculture, and commerce in the region. For this purpose, the party organs have mobilized a great number of specialists who are exploring and studying the Cluj region, thereby assisting the People's Councils and the cooperative movement in the proper execution of their activities.

The development of industry in the city of Cluj, as well as in the Cluj region, is directly connected with the development of power production. Increasing the supply of power, by utilizing all sources of power, will not only help state industry to increase its production potential, but will also contribute to the development of local industries, as well as to the socialist transformation of agriculture and to the cultural development of the working people.

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The principal source of water power is the Somesul River. A few relatively large electric power plants, as well as some hydroelectric stations of local importance, may be erected along the Somesul Cald, Somesul Rece, and Aries rivers of the Cluj region and also along the neighboring Lapus and Dragan Rivers.

Another source of energy in the Cluj region is methane gas. The use of methane gas will conserve wood and bring about a reduction in costs for enterprises using this fuel.

The important deposits of brown coal located in the valley of the Almas and Agris rivers and along the middle course of the Somesul River Valley, as well as the thin strata of coal found in a number of areas, permit the use of the Cluj coal for increasing the caloric power of carbon residues, for burning lime and gypsum found in the region, and for making briquettes to replace wood. Coal by-products may also be used by thermal electric power plants and for mechanizing underground work.

There are peat deposits in the mountain bogs of the upper basin of the Somesul Cald and Somesul Rece rivers and in the Armas River valley. Although it is an inferior fuel, peat may nevertheless be used to replace costlier fuels.

There are underground deposits of metallic minerals and other minerals in the Cluj region. Rich, unexploited deposits of silver and gold and other metals are to be found here. Tellurium, either as a gold-containing metal or as an element, antimony, deposits containing chalcopyrite, iron, manganese, and bauxite are present.

There are in addition quartz for the electroceramic industry, the refracting industry, and the glass industry; feldspar for the manufacturing of fine ceramics, glass, electric insulators, and tourmaline (a secondary product used in the extraction of boron); kaolin, which may be used in ceramics after the pyrite is removed from its contents; celestine, which is used for the extraction of sugar from molasses and also as ballast in oil-drilling operations.

Underground, in the Cluj region, are found various rocks, metamorphic and sedimentary, which can be used as raw materials for road construction. Those of greater importance for industry are gypsum, marls and argillaceous marls, limestone, quartz- and kaolin- containing sands, and salt. Eruptive rocks, granite, dacites, andesites, basalt, and sandstone may be used for road construction in place of more expensive materials or more essential materials.

The economic exploitation of the resources found in the substratum of the Cluj region must be the common concern of scientists in institutions of higher learning and of technicians in enterprises in the Cluj region and elsewhere.

State enterprises of the region, as for example "Industria Sarmei" in Campia Turzii, the "Unirea Cluj" Metallurgical Plant, the CFR (Rumanian Railroad System) workshop, all in Cluj; "Electrocarbon," "Electro Ceramica", "Industria Sticlei," all in Turda, as well as the leather goods industry, of which the "Ianos Herbak" plant is the main enterprise, can all supply the local industry with large quantities of waste materials.

Agriculture also helps the development of local industry. Agriculture provides the entire region with food and industrial crops for specialized enterprises. Much attention is paid, throughout the region, to the production of textile crops such as flax and hemp. The average hemp production in various districts of the Cluj region amounts to 2,000-3,100 kilograms per hectare. Of the arable land in the Cluj region, 3.3 percent is planted to oleaginous plants.

The sunflower crop yields an average of 600-900 kilograms per hectare. Sugar beets are cultivated on 0.5 percent of the arable land of the region. The region in general and the city of Cluj in particular used to be deficient in the production of legumes. In 1951 the area reserved for the cultivation of vegetables was increased by 55.5 percent over that of 1950 to assure a better supply for towns and workers' centers. The animal production of the region provides the light industry and the food industry with several kinds of food products and raw materials.

Plants and shops in the Cluj region, which once functioned as independent economic units, have been consolidated into a single enterprise, the "Intreprinderile Locale Industriale Cluj" (ILIC). The size of this enterprise has increased as new shops have been established in various sections. At present, six sections are active: (1) extractive (gravel, sand, limestone); (2) construction materials (brick, tile, limekiln); (3) metallurgical (foundry, press, machine shop, and repair shop); (4) wood (carpenter's shop); (5) chemicals; and (6) various waste materials (leather goods shop and a newsprint factory).

The ILIC enterprise produces miscellaneous items, such as construction materials (gravel, sand, limestone), instruments, various kinds of tools, metal objects, wrenches, various types of tongs, sheet-metal scissors, files of various sizes, carpenters' knives, floor boards, horseshoes, currycombs for cattle, blocks for mill motors, toys, celluloid sporting goods, items for domestic use (laundry soap, candles, smalt, leather dyes, soaking and washing powder, stove black, floorwax, fly paper, cleansing powder for dishes and metals), leather goods (belts, shoes, pocketbooks, watch straps, satchels), and other items.

The following table shows the total production of the enterprise by sectors (in thousands of lei):

Branch of Production	Planned for 1951	1950
Extraction	1,241	399
Construction materials	2,272	1,627
Wood	21,948	19,238
Chemicals	9,340	7,003
Metallurgical	8,091	6,921
Miscellaneous	12,952	9,631
Total	55,844	44,819
Percent	100	80.3

The production plan was not fulfilled in 1950 for the following reasons:

1. 1950 was the first year of planned production and the lack of experience led to errors which prevented fulfillment.

2. The lack of trained personnel resulted in faulty estimates.

Production under the Five-Year Plan is to be as follows (in percent):

Branch	1950	1951	1952	1953	1954	1955
Extraction	100	167	389	556	556	556
Construction materials	100	463	617	694	774	1,157
Metals	100	714	1,428	1,714	1,835	1,785

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Branch	1950	1951	1952	1953	1954	1955
Chemical	100	118	126	133	148	166
Wood	100	120	84	156	181	196
Miscellaneous	100	179	205	268	273	297
Total	100	255	397	496	531	551

The production plan for 1951 (by quarters) in percent is as follows:

Branch	1st Qu	2d Qu	3d Qu	4th Qu
Extraction	23.30	23.30	23.30	30.00
Construction materials	8.33	33.33	43.90	14.44
Metallurgy	16.25	17.75	22.50	43.50
Chemicals	18.50	27.50	26.50	27.50
Wood	25.00	25.00	25.00	25.00
Miscellaneous	20.00	25.33	26.66	28.00
Total	17.9	22.3	25.5	34.2

This plan is still inadequately prepared in certain respects. Mechanization in the extraction and wood branches lagged. No attention was paid to the seasonal character of the extraction industry. Bigger quotas should have been set for the second and third quarters, when sand, gravel, and limestone can be left in the open air. In other sections, however, a definite improvement in planning can be observed. In most sections an increase in the number of tasks can be noted for each quarter, which would indicate that during the preparation of the plan attention was paid not only to the results obtained during the basic period but also to unexpected problems.

Increased production is not so much the result of the relatively small investments of 1951 as they are of the following factors: the consequence of the discovery and utilization of (1) latent resources of the enterprises, (2) the more rational organization of manufacturing processes, (3) the more extensive participation of workers in scientific socialist competitions, (4) the revision of existing norms and the establishment and adoption of new norms, (5) the introduction of the new piecework salary system in workshops where it had not yet been used, (6) the introduction of the method of "work according to graphs," (7) the organization of qualification courses, and others. In 1950, socialist competitions were organized in a haphazard manner and enjoyed the participation of only 60 percent of the workers. During the first quarter of 1951, however, as a consequence of the assistance received from party organs and of union activities, approximately 90 percent of the workers were engaged in competitions which are no longer sporadic in nature but are integrated in the nationwide effort initiated by the leading enterprises of the national economy to fulfill the 1951 plan in 11 months.

The method of work according to graphs was also introduced during the first quarter of 1951. Old norms were revised and work norms introduced for the first time in certain workshops. For instance, during 1950 there were no work norms in the chemical branch; beginning in 1951, however, fair norms were established for the soap and celluloid workshops.

To promote the discovery of domestic resources, the enterprise (in accordance with the directives outlined by the party and government in the decision of February 1950 concerning measures which should be adopted for increasing the productivity of labor and improving the living conditions of the workers)

has taken the necessary measures to expand the piecework payment system. Whereas during the fourth quarter of 1950 only 80 out of the 203 workers were paid according to this system (52 working individually and 28 in teams), during the first quarter of 1951 as many as 113 of the 238 workers of the enterprise were paid in this manner (65 working individually and 48 in teams). As a consequence of all these measures, the requirements of the plan for the first quarter of 1951 have not only been met but have been surpassed.

Average fulfillment of the plan for the first quarter of 1951 was 125.8 percent. However, three branches failed to fulfill their requirements, as shown in the table below:

Branch	Percent
Extraction	212
Chemicals	164
Wood	140
Construction materials	75
Miscellaneous waste materials	70
Metallurgical construction	75

The system of piecework payment was adopted by the soap shop of the chemicals branch during the first quarter of 1951. Prior to this, the workers were paid by the hour. As a result, the shop fulfilled its first quarter plan by 124 percent, although it met difficulties in acquiring materials. At another shop of the same section -- the miscellaneous chemicals shop, where the workers are paid by the hour -- the plan was exceeded by only 19 percent in spite of the fact that it met with less difficulties in acquiring materials than the soap shop.

During 1951, the enterprise worked out a plan for acquiring materials. This represents progress, since no such plan was available during 1950. The plan for obtaining materials reveals certain deficiencies. Provisions were worked out only for the acquisition of materials by shops which had operated in 1950. Moreover, no plan was prepared for obtaining materials from local sources. The only plan available called for the acquisition of materials from the central fund, with the exception of the limekiln, which is supplied with limestone extracted by the enterprise itself.

The plan for obtaining materials was not fulfilled during the first quarter of 1951. Only 12 percent of the materials required during the first quarter were allotted to the enterprise, and of these, the supplying enterprises delivered only 19 percent. The supplying enterprises may be blamed for the sporadic manner in which deliveries were made. One of the difficulties in assuring a timely supply of materials to the enterprise is the unwillingness of supply enterprises to conclude any contracts with ILIC, which is, consequently, unable to force the suppliers to comply with the dispositions concerning the allotment of materials. The decision of the Council of Ministers of June 1951 concerning measures for enforcing contractual obligations will bring about a radical change in the manner of supplying the enterprise with materials. During the first quarter, the enterprise did not receive its allotted quantity of leather scraps. In fact, it received only 4 percent of the leather and leather sole scraps which it could have used. The leather shops have, nevertheless, been able to fulfill their share of the production plan to a certain extent -- for example, the handbag shop, 131 percent, and the shoe shop, 49 percent. These results are due to the skill and ingenuity of the workers who carefully and repeatedly sorted scraps of leather which were considered worthless in the past. It thus became possible to manufacture from these scraps items such as bags for kindergarten pupils.

The enterprise used remnants never previously used and even increased its assortment of manufactured goods. The difficulties connected with supplying the enterprise with various waste materials (leather and leather sole scraps, waste paper, and other items) arise from the fact that these materials still belong to the central management and consequently arrive late. Moreover, the allotments are definitely insufficient, since they meet only 14 percent of the total needs of the enterprise. In addition, and as a consequence of centralized management of waste materials, the enterprise is often allotted waste materials from remote localities (Sebes-Alba, Oradea, Bucharest, Bacau), which entail substantial transportation costs and which substantially increase manufacturing costs. Such allotments are incompatible with planned economy. As a matter of fact, the need for eliminating useless and expensive transportation was stressed by the government in its decision of 11 February 1950 concerning necessary organizational measures for fulfilling the 1950 state plan.

The central organs are only able to satisfy the needs of local industries to a very small extent, and it even happens that state enterprises quite frequently refuse to follow orders for materials allotment, or they supply only those waste materials which cannot be used by their own shops. Only about 3 percent of the total quantity of materials used by the enterprise shops from 1 January to 31 March 1951 was obtained from allotments from central funds; the rest was obtained by local purchases.

A comparison of results obtained in the last quarter of 1950 and the first quarter of 1951 reveals serious mistakes in plan preparation and the difficulty of acquiring trained workers. These difficulties were much smaller than those connected with obtaining materials. The following are percents of plan fulfillment:

Category	Fulfillment 4th Qu 1950	Plan for 1st Qu 1951	Fulfillment 1st Qu 1951
Total production	100	106	134
Salary fund	100	155	124
Average number of wage earners	100	129	115
Productivity of wage earners	100	83	116
Average salary of wage earners	100	121	107

The above table shows that while only a 6-percent increase in the total production was anticipated, a 55-percent increase of the salary fund was provided. Similarly, the plan of the first quarter of 1951 provides a 21-percent increase of the average salary, while the productivity of labor is planned for a lower level than for the fourth quarter of 1950, the base period. This data reveals several important planning mistakes. The principles of planning the labor force, and the directives issued by the party and government, were ignored in elaborating the work and salary plan.

An increase of average salary must be coordinated with an increase of labor productivity so that the rate of increase of labor productivity during any one given period is faster than the average salary increase. Likewise, the increase in value of total production must always be greater than an increase in the salary fund. This is the only way to effect a continuous reduction in manufacturing costs and, concurrently, increase the reserves for the national economy and raise the living standard of the working people. This principle

has not been observed in the elaboration of work and salary plans. But even if we analyze the provisions of the plan concerning the increase of labor productivity we can see another mistake in planning, at least as serious as the one indicated above. In elaborating a plan, we must always begin with the best achievements of the base period and, by analyzing future possibilities, establish increasingly more ambitious tasks. These tasks should never be beyond accomplishment but under no circumstances, may they be less than those of the base period. Therefore, the planning for the first quarter of 1951 of a lower level of labor productivity (83 percent) than the one attained during the last quarter of 1950 is totally inexcusable.

The enterprise has met with difficulties in acquiring skilled workers from the reeducation center where the workers are regularly obtained. Thus far the center has only been able to supply unskilled workers. To cope with this situation a training course has been planned; however, the course had not been started during the first quarter of 1951. This shortcoming of the enterprise will be overcome during the following quarters. There is still much to be done toward computing and planning manufacturing costs. Statistical work has been of poor quality during 1950. No analyses of statistical procedures employed, which could have served as a guide for elaborating the 1951 plan, were performed.

Moreover, the data of the manufacturing cost plan differs from that of the financial plan and the data of both plans differs from the production plan. This proves that there is still defective collaboration between the various section of the enterprise. The planning work is still not sufficiently coordinated. However, the enterprise has been successful in correcting a few of these deficiencies.

It should be mentioned that insofar as its financial situation is concerned, the enterprise did not have its own operating funds until the end of the first quarter of 1951, but worked only with credits obtained from the State Bank.

The products of the enterprise are sold through state commercial organs and cooperatives. A few products are sold directly to consumers (enterprises, institutions, private individuals, etc.). The state commerce organs sell approximately 70 percent of the enterprise's production, cooperatives sell approximately 20 percent, and the remaining 10 percent is sold directly to consumers.

Approximately 50 percent of the products are sold on the basis of previously concluded contracts. The reason for this low percentage is that buyers are reluctant to sign contracts, and the enterprise itself hesitates to sign too many contracts because of difficulties in obtaining raw materials. It should be observed, however, that even this percentage is higher than that of 1950, when only 30 percent of the enterprise's products were sold on a contractual basis. In general, the enterprise has no difficulty in selling its products, with the exception of such products as quicklime and ping-pong balls, the price of which is still too high.

The production of the enterprise exceeds local requirements for a large majority of its products. Most of this production is acquired by the Centrocom (COCM) and the Centrocoop, which sends it to those parts of the country where it is most needed.

The uneven results obtained during the first quarter of 1951, which amounted to 212 percent for the extraction branch and 75 percent for the construction materials branch, reveals a deficiency in statistical work. Without accurate statistics, planned management cannot be introduced in all sections of the enterprise.

The handicraft production cooperatives, in addition to fulfilling part of the needs of urban working people, are also important for developing trade between town and village. By increasing the volume of heavily consumed products, making them available to the working peasantry through the network of state or cooperative commercial organs, the handicraft cooperatives contribute to the establishment of an economic basis of socialism in our country.

Handicraft production cooperatives in the city of Cluj are the Metal-Chemical Union, the Leather and Footwear Union, and the Delivery Services Union. Those in the city of Oradea are the Construction Union and the Textile Union. The following are also included among production cooperatives: the Victoria Centrocoop factories in Cluj, composed of the footwear factory, the knitting mill, the men's and women's clothing factory, and the sugar products factory. This cooperative unit is directly responsible to Centrocoop in Bucharest and is composed of production sections of the Victoria Consumer Cooperative. The total number of workers and officials of these cooperatives is about 2,550. The Victoria Centrocoop factories are supervised by a board of managers appointed by the Centrocoop. All of their 760 workers and officials receive salaries.

The activities of handicraft cooperatives are most varied, including the manufacturing of various planned products, the making of goods out of local materials and waste materials, repair work, and delivery services.

Piecework is performed in various proportions in all cooperatives, attaining the highest percentage at the Solidaritatea Pantofarilor (95 percent), Victoria, Drumul Nou, Metalurgia, and Higiena. In woodwork, furniture making, and others, all productive workers use the piecework system.

The mechanization of the cooperatives, i.e., supplying them with machines necessary for production, is slow. This is especially disconcerting for the metallurgical cooperatives and for those making men's and women's wear, which are provided with insufficient machinery and equipment.

The cooperatives receive primary and auxiliary materials from centralized funds, from waste materials and rejects, from the private sector and the free market on the basis of contracts and written orders (paints and chemicals, agricultural products, and from local sources (twigs, rush, household articles, brooms, rejects and waste materials, and other materials).

The materials distributed to cooperatives often are not obtained from local or neighboring enterprises, but from remote regions, thus delaying their delivery and increasing the manufacturing costs. At the same time, identical materials are sent to other regions from local enterprises. For instance, the Steaua Rosie Cooperative receives materials required for making buttons, combs, and brushes from Bucharest, while the local slaughterhouse delivers these materials to enterprises located in other regions. Likewise Steaua Rosie Cooperative receives cloth remnants from various DCAs (Collection and Purchasing agencies), from the local one. The Transylvania Cooperative receives leather remnants from factories located in different towns, but not from Ianos Herbak.

The supplying of the Victoria Centrocoop factories by the Bucharest Centrocoop leaves much to be desired. As a consequence, the manufacturing capacity of these factories is not fully used. Moreover, even those materials which they do receive arrive after great delays. A serious shortcoming of these factories is that to this day they have not prepared an organizational plan, and have not established a salary fund, which, of course, hampers the proper organization of labor and the payment of salaries.

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It should be observed that insofar as the supplying of handicraft cooperatives with local materials is concerned the directives outlined by Vasile Luca at the meeting of the Commission for the Organization of Handicraft Cooperatives in June 1950 have not been observed. One of the deficiencies in the organization of production cooperatives, according to Luca, is the insistence of the central organs on control of their activities. Since to this day the COCM allots waste materials to handicraft cooperatives, it is obvious that the shortcoming pointed out by Luca has not yet been remedied. This deficiency causes unnecessary expenditures, since rejects and waste materials from remote localities are frequently sent to the Cluj region cooperatives, although they are also available in Cluj or in neighboring localities, easily obtainable and at considerably smaller cost.

Due to the present centralized system of allotting waste materials and to the existence of annex sections in enterprises of national interest, the handicraft cooperatives are unable to obtain the necessary waste materials directly from the enterprises of national interest by concluding contracts with them. In view of this situation, many cooperatives blame all the supplying difficulties on the central organs. They make no attempt to discover, on their own initiative, new local resources. Instead, they expect the central organs to resolve all the difficulties.

The total and partial destruction of a large number of buildings during the war, combined with the establishment of a large number of new enterprises and institutions and the rapid increase in the number of inhabitants (from 100,000 to 150,000), along with the increase in the number of new enterprises and institutions, has created an increasingly serious housing problem. In view of today's requirements, and especially because of requirements raised by the necessity of fulfilling our Five-Year Plan, which involves a continuous immigration of labor into Cluj, it is essential that an adequate solution to this serious problem be found. The decision of the Council of Ministers of June 1951, concerning the advantageous financing for construction workers' homes, is a major step in this direction. This decision reveals the permanent concern of the party and government for improving the living conditions of the workers. The measures provided in this decision facilitate the construction of private homes. Every attempt must be made to facilitate the building of permanent, inexpensive homes constructed with local resources.

Ordinarily, the foundations are made of concrete with approximately 30 percent coarse stone, this being the cheapest ordinary material for foundations. The cost of a cubic meter, including labor, is 3,100 lei. The advantage in using this material is that it guarantees a more solid foundation. The disadvantage is that large quantities of cement which could be used for other projects, of greater importance to the national economy will be used for home construction. Materials locally available, like limestone for instance, may be substituted for this material.

The use of local materials, which successfully replace concrete, allows a substantial economy in the consumption of cement necessary for the constructions required by the Five-Year Plan and at the same time facilitates a solution of the home construction problem. Homes can even be built at a lower cost than if concrete and crude stone were used. For insulation, tar paper covered with warm bitumen is ordinarily used. Until now, no locally available substitute for this material has been found, but experiments are being made to test the possibility of using paper treated with linseed oil. For walls, brick is ordinarily used. The cost of a cubic meter of brick wall is 4,600 lei. Brick may be replaced by locally available materials, such as gypsum dross. For doors, windows, and other items, ordinary wood is necessary. This may be obtained more cheaply by buying hardwood, which can also be used for floors.

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The usual material for roofs is tile, which costs 12-14 lei per piece. This material can be replaced by homemade tile, which can be made from raw materials available in the outskirts of the city of Cluj at a cost of only 6 lei per piece.

The materials required for water and electric installations cannot be replaced by any of the materials available locally. Experienced engineers and technicians are investigating the possibility of making water pipes from glass.

The ordinary material used for sewage disposal may be replaced by materials locally available, such as baked and glazed clay. According to professional computations, the cost of a cubic meter of a building made from ordinary materials costs 3,900-4,300 lei, whereas a cubic meter made from materials locally available costs only 2,000 lei, including the materials required for water and electric installations.

For experimentation in the pouring of walls, a preliminary model house, one meter in height, was poured in a form complete from foundation to roof.

The construction of workers' homes from local resources is thus not only possible, but is the proper and advantageous way to relieve the serious housing problem. It will thus be possible to substitute materials readily available in the Cluj region for the materials necessary for important constructions required by the Five-Year Plan. In this manner, a 50-percent reduction in building costs is achieved. By building homes from local materials, it becomes possible to free qualified workers for the great constructions required by the Five-Year Plan and to replace them, to a very large extent, by nonskilled or semiskilled men. The time required for building a house from locally available materials is much shorter than that required for building it from planned materials.

The problem of utilizing waste materials plays an important part in the development of local industry and for use by cooperatives. Many waste materials and remnants, which could be of great value to the local industry and to handicraft cooperatives, are still discarded as worthless trash.

The importance of recovering metals from junk is generally known and many metals are thus collected by the DCA. Nevertheless, important quantities of metals are still lost in garbage, waste materials, etc. It is the duty of local organs to prevent this by organizing metal collections with the assistance of mass organizations such as trade unions, AST (Association of Scientists and Technicians), and others, and youth groups. Thus, larger quantities of metals could be saved in the future. Many useful articles such as sandals, watch straps, and other items, may be manufactured from leather remnants. This type of economic exploitation is practiced both by the Ianos Herbak Enterprise and by handicraft cooperatives. But even the waste materials from this second manufacturing may be used in several ways such as the making of artificial leather. From the remnants of leather tanned with chromium by the calcination process, it is possible to obtain chromium oxide which is used for tanning and for manufacturing several mineral paints.

The smallest scraps of leather from footwear factories as well as used leather (discarded footwear) may be used for making linoleum and as an excellent agricultural fertilizer rich in nitrogenous materials. Although the Herbak Enterprise does manufacture artificial leather from leather remnants, and also possesses a complete installation for recovering chromium, there is still room for progress, which can be achieved through research, exchanges of experience with similar enterprises, and the assistance of scientific institutions. The manufacturing of the above-mentioned fertilizer from unreclaimable leather and discarded footwear is imperative. Many valuable waste materials from

abattoirs and from abandoned dead animals can also be used. If the utilization of the latter is not prohibited by the sanitation authorities, it is essential that their fat be used for manufacturing soap, their bones for making bone oil and phosphorus compounds, their hoofs for making lubricating oil, etc.

Huge quantities of lumber and industrial waste are obtained from the wood-cutting and lumber industry. As lumber waste, there are logs, roots, branches, bark, kindling, and other items. The industrial waste is also very important and includes pieces of lumber, splinters, shavings, sawdust, and other items. From a chemical point of view, wood waste may be exploited economically by the following industries: cellulose, tannic extracts, colophony, and turpentine. It also may be used in wood hydrolysis and in the dry-distillation process. Wood ash, an important waste material, contains, among other things, calcium phosphate, a desirable fertilizer, and potassium carbonate (CO_3K_2), an excellent fertilizer and a basic material in great demand by many industries. Since Rumania does not have any potassium deposits, greater attention should be paid to wood ash as a source of potassium.

Wild chestnuts can be used successfully in making oils, since they contain 38-40 percent starch, 5-7 percent oil, and 3-4 percent saponine. It follows, therefore, that in manufacturing starch, glucose, and methyl alcohol one kilogram of wild chestnuts are the equivalent of 2 kilograms of potatoes or 0.75 kilogram of corn. Prune seeds, discarded by the makers of prune jam and by plum brandy distilleries, may be used in oil-extraction processes. Grape seeds, from our wine-making regions, are also rich in valuable materials. Tomato seeds, left after the making of bouillon, also may be exploited economically.

The Technology Department of the V. Babes University has developed a method for making cellulose from chaff, a waste material produced in large quantities during the peeling of hemp and flax. Previously this chaff was simply burned. This was also a form of utilization, but hardly in agreement with the fundamental principles of planned economy. Experiments have shown that this chaff may be used for making medium- and good-quality paper, and it is indeed essential in these days when cultural activities require increasingly larger quantities of paper.

Unused textile remnants may be exploited economically by the paper industry, especially in the manufacturing of better quality paper. Large quantities of waste materials should be collected by well organized teams.

The Cluj region appears to be well integrated, possessing various primary materials for the development of local production and many types of soil for the development of different branches of agriculture. Properly utilized, these materials and soils could satisfy the food requirements of the population of the Cluj region.

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